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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,557	12/28/2004	Oliver Moller	262605US0X PCT	2807
22850	7590	03/20/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			WITHERSPOON, SIKARL A	
			ART UNIT	PAPER NUMBER

1621

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/519,557	MOLLER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Sikarl A. Witherspoon	1621	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/6/06</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The examiner has considered applicants' amendment filed February 6, 2006 and the remarks therein. In light of applicants' arguments, the examiner has withdrawn the rejections of record; however, the following new rejections are being made.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 9 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Massie (US 3,992,453).

Massie discloses a process wherein an olefinically unsaturated compound is hydroformylated in the presence of a transition metal catalyst and ethylene carbonate (see examples, especially example II). This process anticipates the instant claims.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 2, 4, 6-8, 10-12, 14, 15, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drago et al (US 5,012,008) and Massie (US 3,992,453) in combination.

The instant claims limit the hydroformylation process of the present invention to the use of a cyclic carbonic ester of formula I having specific substituents, to the use of a nonpolar solvent having a specific weight based on the reaction mixture, and the olefin employed coming from a first hydroformylation reaction.

Drago et al do not expressly teach these limitations; however, Drago et al do teach the hydroformylation of olefins having from 2 to 6 carbon atoms in the presence of a liganded rhodium catalyst, and substituted or unsubstituted organic esters, aromatic hydrocarbons, organic derivatives of oxygen, such as propylene carbonate, etc., (col.4, line 52 to col. 6, line 55). Massie teaches a hydroformylation process wherein an ester of carbonic acid, i.e., ethylene carbonate, propylene carbonate, dipropyl carbonate, etc., is used as a promoter, in an amount of at least 15 by weight (col. 4, line 34 to col. 7, line 28).

The examiner contends that it would have been obvious to a person of ordinary skill in the art, at the time the present invention was made, to employ as starting material, an olefinically unsaturated compound that has been recycled from the unreacted starting material of a first or previous hydroformylation or any other source of olefinic compound. The examiner further contends that it would have been obvious to a person of ordinary skill in the art to employ any amount of solvent that would remain inert to the hydroformylation reaction, and yet, allow for optimal conversion of the

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olefinic material to the hydroformylation product. It would also have been obvious to employ a substituted cyclic carbonic ester in the process taught by Drago et al, since the reference teaches that organic derivatives of oxygen, such as propylene carbonate, may be substituted, and further, since Massie teaches several carbonic acid esters as a promoter in hydroformylation reactions in amounts of at least 1% by weight; a person of ordinary skill would reasonably expect the substituted or unsubstituted compound to be effective in its purpose, i.e., dispersing the rhodium catalyst and maintaining it in amorphous phase on the support material (col. 6, lines 34-55) according to Drago et al, and/or in increasing the linear selectivity of the desired product, according to Massie.

Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drago et al and Massie as applied to claims 2,4, 6-8,10-12, 14, 15, and 17-20 above, and further in view of Maher et al (WO 87/07261).

The instant claims limit the solvent used in the process of the present invention to substituted or unsubstituted hydrocarbons having from 10 to 50 carbon atoms, or olefins having from 3 to 24 carbon atoms.

Maher et al teach a hydroformylation reaction using a rhodium-containing catalyst in the presence of an organic polymer containing polar functional groups, including carbonates, in the presence of a solvent such as Texanol, a substituted hydrocarbon having at least 10 carbon atoms (p 32).

It would have been obvious to employ a solvent such as Texanol in the process of the instant invention, since Maher et al teach that said solvent can be used in

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hydroformylation processes that employ compounds such as carbonates, used to stabilize the rhodium catalyst.

Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on February 6, 2006 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikarl A. Witherspoon whose telephone number is 571-272-0649. The examiner can normally be reached on M-F 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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*Sikarl A. Witherspoon*  
**SIKARL A. WITHERSPOON**  
**PATENT EXAMINER**